UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/693,986	10/23/2000	Takashi Kitaguchi	198768US2	9307

22850 7590 05/05/2004

OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER	
HENN, TIMOTHY J	

ART UNIT	PAPER NUMBER
2612	4

DATE MAILED: 05/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/693,986	KITAGUCHI ET AL.	
	Examiner	Art Unit	
	Timothy J Henn	2612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 October 2000*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14 and 17-26* is/are rejected.

7)☒ Claim(s) *15 and 16* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *23 October 2000* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *2*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. Figures 1A, 1B, 1C, 1D, 2A, 2B, 2C and 3 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 2, 6, 8, 10 and 25 are rejected under 35 U.S.C. 102(b) as being anticipated by Okauchi (US 5,907,353).

[claim 1]

5. In regard to claim 1, note that Okauchi discloses an image pickup apparatus (Figure 1) for picking up an image of a target object in divisions as a plurality of partial images which overlap by a predetermined quantity (Column 6, Lines 6-67) comprising: display means for displaying an image (Figure 1, Item 3); and partial image generating means for generating the partial images to be displayed on the display means by dividing a full image of the target image which is picked up in advance into predetermined sizes using information related to an overlap of the partial images (Figure 3; Column 6, Lines 6-51; Column 7, Lines 18-52; The office notes that the image size, focal length, view angle and object distance are "information related to an overlap of the partial images").

[claim 2]

6. In regard to claim 2, note that Okauchi discloses an image pickup apparatus (Figure 1) for picking up an image of a target object in divisions as a plurality of partial images which overlap by a predetermined quantity (Column 6, Lines 6-67) comprising: a display unit for displaying an image (Figure 1, Item 3); and a partial image generating unit for generating the partial images to be displayed on the display means by dividing a full image of the target image which is picked up in advance into predetermined sizes using information related to an overlap of the partial images (Figure 3; Column 6, Lines 6-51; Column 7, Lines 18-52; The office notes that the image size, focal length, view angle and object distance are "information related to an overlap of the partial images").

[claim 6]

7. In regard to claim 6, note that Okauchi discloses a display unit which time-divisionally displayed a divided image and an image presently being picked up at the same position (Column 6, Lines 6-34; The office notes that a first full image of what is to be picked up is displayed on the display unit in a live view mode to allow the user to frame the image, and after the full image is taken, a divided image is displayed on the display in the same position that the full image live view was previously displayed. Since both images are displayed at different times, they are inherently displayed time-divisionally).

[claim 8]

8. In regard to claim 8, note that Okauchi discloses a partial image selecting unit which selects a divided image (Column 6, Lines 52-56).

[claim 10]

9. In regard to claim 10, note that Okauchi discloses a generating unit generating a combined image by combining the partial images (Column 6, Lines 56-63).

[claim 25]

10. Claim 25 is a method claim corresponding to apparatus claims 1 and 2. Therefore, claim 25 is analyzed and rejected as previously discussed with respect to apparatus claims 1 and 2.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

12. Claim 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okauchi (US 5,907,353) in view of Anderson (US 6,657,667).

[claim 4]

13. In regard to claim 4, note that Okauchi discloses all limitations except for a display unit which simultaneously displays a divided image and an image presently being picked up in an overlapping manner. Anderson discloses a display method in which a divided image is displayed in one portion of the display while and a partially overlapping live view of an image to be taken is displayed in an adjacent portion (Column 8, Lines 57-61) to allow the user to properly align the next image with the divided images to produce a composite image with better alignment (Column 9, Lines 15-23). Therefore, It would have been obvious to one of ordinary skill in the art at the time the invention was made to display a live view display along with a divided image display as taught by Anderson to allow the user to properly align the camera when taking composite images.

[claim 5]

14. In regard to claim 5, note that Okauchi discloses all limitations except for a display unit which simultaneously displays a divided image and an image presently being picked up at different positions. Anderson discloses a display method in which a divided image is displayed in one portion of the display while and a partially overlapping live view of an image to be taken is displayed in an adjacent portion (Column8, Lines

57-61) to allow the user to properly align the next image with the divided images to produce a composite image with better alignment (Column 9, Lines 15-23). Therefore, It would have been obvious to one of ordinary skill in the art at the time the invention was made to display a live view display along with a divided image display as taught by Anderson to allow the user to properly align the camera when taking composite images.

15. Claims 7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okauchi (US 5,907,353).

[claim 7]

16. In regard to claim 7, note that Okauchi discloses all limitations except for a switch unit switching a display on the display unit to one of a divided image and an image presently being picked up. However, it is well known in the art to provide a review mode for viewing previously taken images such as a divided image to allow a user to determine if a taken image needs to be retaken and a preview mode for viewing the current view of the camera (i.e. and electronic viewfinder mode) to allow a user to properly frame an image to be taken, and to provide a method of switching between each mode to increase the usability of the camera (Official Notice). Therefore, It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide both a preview and review mode and a way to switch between the two to allow a user to review previously taken images and view the current image to be picked

up by the camera to aid in framing of the image.

[claim 9]

17. In regard to claim 9, note that Okauchi discloses all limitations except for an interrupt unit interrupting image pickup of the partial images and returning the image pickup apparatus to a predetermined state. However, it is well known in the art to provide a ON/OFF or power switch on a camera which can interrupt all camera activities and place the camera in a powered-off state to preserve the power source when the camera is no longer in use (Official Notice). Therefore, It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a ON/OFF or power switch on the camera of Okauchi to preserve the power source when the camera is no longer in use.

18. Claims 3, 11-14, 17, 20-24 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okauchi (US 5,907,353) in view of Ishida et al. (US 6,639,625).

[claim 3]

19. In regard to claim 3, note that Okauchi discloses all limitations of claim 3 with the exception of a n overlap quantity specifying unit specifying the predetermined quantity of the overlap of the partial images.

20. Ishida et al. teaches a system for picking up high resolution images by taking multiple photos at higher zoom settings and combining them into a single high resolution photo in which a first picture is taken at a first focal length or "field angle" (Column 3, Lines 17-27) and then multiple zoomed in images are taken (Column 3,

Lines 28-46) as defined by a user set field angle (Column 4, Lines 11-25) to allow the user to have greater control over the photo-taking process. Therefore, It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a field angle setting means in Okauchi to allow the user to have greater control in the photo-taking process. The office notes that claim 3 does not require the manner (e.g. field angle, inches of overlap, percentage of overlap) in which the amount of overlap is set, only that a predetermined quantity of the overlap is set. It is further noted that given a main image of a first field angle and a plurality of second images of a second field angle which when taken together recreate the main image, an amount of overlap between the second images is inherently set by setting the field angle at which the second images are taken.

[claim 11]

21. In regard to claim 11, note that Okauchi discloses an image pickup apparatus (Figure 1) for picking up an image of a target object in divisions as a plurality of partial images which overlap by a predetermined quantity (Column 6, Lines 6-67) comprising: display means for displaying an image (Figure 1, Item 3); and partial image generating means for generating the partial images to be displayed on the display means by dividing a full image of the target image which is picked up in advance into predetermined sizes using information related to an overlap of the partial images (Figure 3; Column 6, Lines 6-51; Column 7, Lines 18-52; The office notes that the image size, focal length, view angle and object distance are "information related to an overlap of the partial images"). Therefore, it can be seen that Okauchi lacks field angle setting

means for setting a field angle with which the target object is to be picked up and partial image generating means which uses the field angle set by the field angle setting means to create the partial images to be displayed.

22. Ishida et al. teaches a system for picking up high resolution images by taking multiple photos at higher zoom settings and combining them into a single high resolution photo in which a first picture is taken at a first focal length or "field angle" (Column 3, Lines 17-27) and then multiple zoomed in images are taken (Column 3, Lines 28-46) as defined by a user set field angle (Column 4, Lines 11-25) to allow the user to have greater control over the photo-taking process. Therefore, It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a field angle setting means in Okauchi to allow the user to have greater control in the photo-taking process.

[claim 12]

23. In regard to claim 11, note that Okauchi discloses an image pickup apparatus (Figure 1) for picking up an image of a target object in divisions as a plurality of partial images which overlap by a predetermined quantity (Column 6, Lines 6-67) comprising: a display unit for displaying an image (Figure 1, Item 3); and a partial image generating unit for generating the partial images to be displayed on the display means by dividing a full image of the target image which is picked up in advance into predetermined sizes using information related to an overlap of the partial images (Figure 3; Column 6, Lines 6-51; Column 7, Lines 18-52; The office notes that the image size, focal length, view angle and object distance are "information related to an overlap of the partial images").

Therefore, it can be seen that Okauchi lacks field angle setting unit for setting a field angle with which the target object is to be picked up and a partial image generating unit which uses the field angle set by the field angle setting means to create the partial images to be displayed.

24. Ishida et al. teaches a system for picking up high resolution images by taking multiple photos at higher zoom settings and combining them into a single high resolution photo in which a first picture is taken at a first focal length or "field angle" (Column 3, Lines 17-27) and then multiple zoomed in images are taken (Column 3, Lines 28-46) as defined by a user set field angle (Column 4, Lines 11-25) to allow the user to have greater control over the photo-taking process. Therefore, It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a field angle setting unit in Okauchi to allow the user to have greater control in the photo-taking process.

[claim 13]

25. In regard to claim 13, note that Ishida et al. teaches an overlap quantity specifying unit (Column 4, Lines 20-25) which sets an amount of overlap by specifying a field angle at which a plurality of composite images are to be taken. The office notes that claim 13 does not require the manner (e.g. field angle, inches of overlap, percentage of overlap) in which the amount of overlap is set, only that a predetermined quantity of the overlap is set. It is further noted that given a main image of a first field angle and a plurality of second smaller images of a second field angle which when joined together recreate the main image, an amount of overlap between the second

images is inherently set by setting the field angle at which the second images are taken.

[claim 14]

26. In regard to claim 14, Okauchi in view of Ishida et al. disclose all limitations with the exception of a setting unit automatically setting the field angle with which the partial images are to be picked up to the predetermined field angle. However, it is well known in the art to set camera settings to default values to avoid confusing the user and to make the photo-taking process easier. Therefore, It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a setting unit to automatically set the field angle to the predetermined value to make the photo-taking process easier for the user.

[claim 17]

27. In regard to claim 17, note that the system of Okauchi discloses an object size measuring unit which automatically sets a number of divisions of a full image of the target object to be taken (Column 7, Lines 18-53); and a calculating unit calculating the predetermined field angle from the number of divisions specified (Column 6, Lines 6-52; The office notes that since the zoom lens is automatically controlled to take one of the division pictures, it must inherently use the number of divisions to determine the zoom power or "field angle").

[claim 20]

28. In regard to claim 20, note that Okauchi discloses a display unit which time-divisionally displayed a divided image and an image presently being picked up at the same position (Column 6, Lines 6-34; The office notes that a first full image of what is to

be picked up is displayed on the display unit in a live view mode to allow the user to frame the image, and after the full image is taken, a divided image is displayed on the display in the same position that the full image live view was previously displayed. Since both images are displayed at different times, they are inherently displayed time-divisionally).

[claim 21]

29. In regard to claim 21, note that Okauchi in view of Ishida et al. disclose all limitations except for a switch unit switching a display on the display unit to one of a divided image and an image presently being picked up. However, it is well known in the art to provide a review mode for viewing previously taken images such as a divided image to allow a user to determine if a taken image needs to be retaken and a preview mode for viewing the current view of the camera (i.e. and electronic viewfinder mode) to allow a user to properly frame an image to be taken, and to provide a method of switching between each mode to increase the usability of the camera (Official Notice). Therefore, It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide both a preview and review mode and a way to switch between the two to allow a user to review previously taken images and view the current image to be picked up by the camera to aid in framing of the image.

[claim 22]

30. In regard to claim 22, note that Okauchi discloses a partial image selecting unit which selects a divided image (Column 6, Lines 52-56).

[claim 23]

31. In regard to claim 23, note that Okauchi in view of Ishida et al. disclose all limitations except for an interrupt unit interrupting image pickup of the partial images and returning the image pickup apparatus to a predetermined state. However, it is well known in the art to provide a ON/OFF or power switch on a camera which can interrupt all camera activities and place the camera in a powered-off state to preserve the power source when the camera is no longer in use (Official Notice). Therefore, It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a ON/OFF or power switch on the camera of Okauchi to preserve the power source when the camera is no longer in use.

[claim 24]

32. In regard to claim 24, note that Okauchi discloses a generating unit generating a combined image by combining the partial images (Column 6, Lines 56-63).

[claim 26]

33. Claim 26 is a method claim corresponding to apparatus claims 11 and 12. Therefore, claim 26 is analyzed and rejected as previously discussed with respect to apparatus claims 11 and 12.

34. Claim 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okauchi (US 5,907,353) in view of Ishida et al. (US 6,639,625) as applied to claim 12 above, and further in view of Anderson (US 6,657,667).

[claim 18]

35. In regard to claim 18, note that Okauchi in view of Ishida et al. disclose all limitations except for a display unit which simultaneously displays a divided image and an image presently being picked up in an overlapping manner. Anderson discloses a display method in which a divided image is displayed in one portion of the display while and a partially overlapping live view of an image to be taken is displayed in an adjacent portion (Column 8, Lines 57-61) to allow the user to properly align the next image with the divided images to produce a composite image with better alignment (Column 9, Lines 15-23). Therefore, It would have been obvious to one of ordinary skill in the art at the time the invention was made to display a live view display along with a divided image display as taught by Anderson to allow the user to properly align the camera when taking composite images.

[claim 19]

36. In regard to claim 19, note that Okauchi in view of Ishida et al. disclose all limitations except for a display unit which simultaneously displays a divided image and an image presently being picked up at different positions. Anderson discloses a display method in which a divided image is displayed in one portion of the display while and a partially overlapping live view of an image to be taken is displayed in an adjacent portion (Column8, Lines 57-61) to allow the user to properly align the next image with the divided images to produce a composite image with better alignment (Column 9, Lines 15-23). Therefore, It would have been obvious to one of ordinary skill in the art at the time the invention was made to display a live view display along with a divided

image display as taught by Anderson to allow the user to properly align the camera when taking composite images.

Allowable Subject Matter

37. Claims 15 and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

[claims 15 and 16]

38. In regard to claims 15 and 16, the prior art does not teach or fairly suggest a system which calculates a field angle with which a plurality of images are taken to form a joined image, wherein the field angle is calculated from a desired resolution and one of a distance to an object or an object size

Conclusion

39. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following prior art further shows the current state of the art in image processing to form one high resolution image out of a plurality of smaller images:

i.	Akagi	US 5,880,778
ii.	Egawa	US 5,138,460

The following prior art further shows the current state of the art in displaying a divided image on a display screen:

iii.	Tsuruta	US 5,754,230

iv. Torimaru et al. US 4,589,029

The following prior art further shows the current state of the art in simultaneously displaying a previously taken image and a aid in the setting of camera parameters for capturing a new image:

v. Okanoe JP 10-304227 A

40. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy J Henn whose telephone number is (703) 305-8327. The examiner can normally be reached on M-F 7:30 AM - 5:00 PM, alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy R Garber can be reached on (703) 305-4929. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TJH
4/21/2004

NGOC-YEN VU
PRIMARY EXAMINER